

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 3200

**PROGRESS SCHEDULES AND REPORTS**

**PART 1 – GENERAL**

**1.01 Summary**

- A. Section includes administrative and procedural requirements for documenting the progress of design and construction during performance of the Work, including the following:
  - 1. Preliminary Baseline Design/Construction Schedule.
  - 2. Design-Build Team's Detailed Final Baseline Design/Construction Schedule.
  - 3. Submittal Schedule.

**1.02 Definitions**

- A. Activity:
  - 1. A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a design or construction schedule consume time and resources.
  - 2. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times, have no float and are on the longest path through the schedule.
  - 3. Predecessor Activity: An activity that precedes another activity in the network.
  - 4. Successor Activity: An activity that follows another activity in the network.
- B. Cost-loading:
  - 1. The allocation of the Schedule of Values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Stipulated Sum, unless otherwise approved by the Owner.
- C. CPM:
  - 1. Critical Path Method (CPM): A method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of the Project.
- D. Critical Path:
  - 1. The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Event:
  - 1. The starting or ending point of an activity.
- F. Float:
  - 1. The measure of leeway in starting and completing an activity.
  - 2. Float time is not for the exclusive use or benefit of either Owner or Design-Build Team, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion dates. Design-Build Team's use of float must be pre-approved by the Owner prior to use.
  - 3. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
  - 4. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

- G. Fragnet
  - 1. A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- H. Major Area:
  - 1. A story of construction, a separate building, or a similar significant construction element.
- I. Milestone:
  - 1. A key or critical point in time for reference or measurement.
- J. Network Diagram:
  - 1. A graphic diagram of a network schedule, showing activities and activity relationships.
- K. Resource Loading:
  - 1. The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

### **1.03 Submittals**

- A. Qualification Data:
  - 1. Submit qualifications for a full-time Scheduling Manager. See 1.04.A and 1.06.D below.
- B. Submittal Schedule:
  - 1. Submit three copies of the Submittal Schedule. Schedule Submittals shall also be submitted in native, active electronic format. Arrange the following information in a tabular format:
    - a. Scheduled date for first submittal.
    - b. Final Specification Section number and title, cross-referenced to Performance Specifications in the Bridging Documents.
    - c. Submittal category (action or informational).
    - d. Name of subcontractor.
    - e. Description of the Work covered.
    - f. Scheduled date for the Owner's final release or approval.
- C. Preliminary Baseline Design/Construction Schedule:
  - 1. Submit two opaque copies, large enough to show entire network for entire design and construction periods. Show logic ties for activities.
- D. Design-Build Team's Detailed Final Baseline Design/Construction Schedule
  - 1. Submit two opaque copies of initial schedule, large enough to show entire schedule for entire design and construction periods.
  - 2. Submit an electronic copy of schedule, using software, and labeled to comply with requirements for submittals. Include type of schedule (Initial, Master, or Updated) and date on label.
- E. CPM Reports:
  - 1. Concurrent with CPM schedule, submit three copies of each of the following computer-generated reports. Format for each activity in reports must contain activity number, activity description, cost and resource loading, original duration, remaining duration, Early Start Date, early finish date, late start date, late finish date, and total float in calendar days.
    - a. Activity Report: List of all activities sorted by activity number and then Early Start Date, or Actual Start Date if known.
    - b. Activity Report: List of all activities sorted by Early Start Date or Actual Start Date if known.

- c. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then Early Start Date, or Actual Start Date if known.
- d. Total Float Report: List of all activities sorted in ascending order of total float.
- e. Earnings Report: Compilation of Design-Build Team's total earnings from the Notice to Proceed (NTP) until most recent Application for Payment.

#### **1.04 Quality Assurance**

**A. Scheduling Manager Qualifications:**

- 1. An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within twenty four (24) hours of the Owner's request. Scheduling Manager must show at least ten (10) years in scheduling similar projects and expertise in the use of all scheduling software required by this Section 01 3200 including, but not limited to, Primavera P6 Enterprise Project Portfolio Management, version 8 or later, as required in 2.03.A below.

**B. Pre-scheduling Conference:**

- 1. Conduct conference at the Project site. Review methods and procedures related to the Preliminary Design/Construction Schedule and Design-Build Team's Design/Construction Schedule including, but not limited to, the following:
  - a. Review software limitations and content and format for reports.
  - b. Verify availability of qualified personnel needed to develop and update schedule.
  - c. Discuss constraints, including phasing, work stages, area separations, interim milestones, and partial Owner occupancy.
  - d. Review anticipated AHJ review times.
  - e. Review delivery dates for Owner-furnished products.
  - f. Review time to acquire, set up and occupy the field office(s).
  - g. Review dates established in the Owner's Project Milestone Schedule and other milestones of important events.
  - h. Review dates of all mobilization activities on site, including notices and permits.
  - i. Review dates detailing the planned design schedule, including submittals and reviews.
  - j. Review schedule for work of Owner's separate contracts.
  - k. Review time required for review of other submittals and resubmittals.
  - l. Review requirements for tests and inspections by independent testing and inspecting agencies.
  - m. Review time required for completion and startup procedures.
  - n. Review and finalize list of construction activities to be included in schedule.
  - o. Review submittal requirements and procedures.
  - p. Review procedures for updating schedule.

#### **1.05 Coordination**

**A. General:**

- 1. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- 2. Coordinate Design-Build Team's Design/Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
- 3. Secure time commitments for performing critical elements of the Work from parties involved.
- 4. Coordinate each design and construction activity in the network with other activities and schedule them in proper sequence.

## **1.06 General Scheduling Requirements**

- A. The Design-Build Team will develop and maintain the Design/Construction Schedule for the scope of work contained in the Contract. The purpose of the Design/Construction Schedule will be to:
  - 1. Assure adequate planning, scheduling, and reporting during execution of the design, construction and related activities so they may be prosecuted in an orderly and expeditious manner, within the Contract Time and the Milestones stipulated by the Agreement or other Contract Documents;
  - 2. Assure coordination of the work of the Design-Build Team and the various Designers, subcontractors and suppliers at all tiers;
  - 3. Assist in the preparation and evaluation of the Design-Build Team's monthly progress payments;
  - 4. Assist in monitoring the progress of the work and evaluating proposed changes to the Contract and the Construction Schedule; and,
  - 5. Assist in detecting problems for the purpose of taking corrective action and to provide a mechanism or tool for determining and monitoring such corrective actions.
  - 6. Provide Project participants with an overall Project management tool to monitor Project status and progress regarding the Contract Time and Completion Dates.
- B. The Work will be prosecuted such that it will insure meeting the specified Contract Time. By execution of the Agreement, the Design-Build Team represents that he has analyzed the work, the requirements of design, the materials and methods involved, the systems of the building, availability of qualified professional personnel and labor, restrictions of the site, constraints imposed, their own workload and capacity to perform the work, and agrees that the specified times are reasonable considering the existing conditions prevailing in the locality of the work, including weather conditions, and other factors, with only the allowance for variations from average or ideal conditions otherwise permitted in Contract Documents.
- C. The work under this Contract will be planned, scheduled, executed, and reported using the Precedence Diagramming Technique of the Critical Path Method (hereinafter referred to as CPM).
- D. The Design-Build Team must employ the full-time services of at least one Scheduling Manager (not the Project Manager, Project Engineer, Foreman, or Superintendent) fully qualified in CPM scheduling of projects of similar size and scope for the duration of the Contract.
- E. Any and all milestones listed in these specifications, or elsewhere in the Contract Documents, represent only certain major items of design or construction work. The milestone completion dates indicated are considered essential to the satisfactory performance of this Contract and to the coordination of all work on the Project. The Owner reserves the right to require the Design-Build Team to prosecute the work in accordance with the specified milestone dates.

## **PART 2 - SCHEDULING SUBMITTALS**

### **2.01 Submittal Schedule**

- A. Preparation:
  - 1. Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, re-submittals, ordering, manufacturing, fabrication, and delivery when establishing dates.
  - 2. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Design-Build Team's Construction Schedule.
  - 3. Initial Submittal: Submit concurrently with Preliminary Baseline Design/Contraction Schedule. Include submittals required during the first 120 calendar days of design and construction. List

those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.

4. Final Submittal: Submit concurrently with the first complete submittal of Design-Build Team's Detailed Final Baseline Design/Construction Schedule.

## **2.02 Design-Build Team's Design / Construction Schedules, General**

- A. Procedures:
  1. Comply with procedures contained herein.
- B. Time Frame:
  1. Extend schedule from date established for the NTP to date of Completion.
  2. Contract completion date will not be changed by submission of a schedule that shows an early or late completion date, unless specifically authorized by Change Order.
- C. Activities:
  1. Treat each story or separate area as a separate numbered activity for each principal element of the Work. The activity number shall remain constant with the specific activity on all schedules submitted throughout the Project's duration.
  2. Activity Duration: Define activities so no activity is longer than fifteen (15) working days, unless specifically allowed by the Owner.
  3. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than sixty (60) calendar days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
  4. Submittal Review Time: Include review and re-submittal times required in Section 01 3300, Submittal Procedures, in the schedule. Coordinate submittal review times in Design-Build Team's Construction Schedule with Submittals Schedule.
  5. Startup and Testing Time: Include not less than ten (10) working days for startup and testing.
  6. Completion: Indicate completion in advance of date established for Completion, and allow time for the Owner's administrative procedures necessary for the Owner to issue a Certification of Completion.
- D. Constraints:
  1. Include constraints and work restrictions required in the Contract Documents (including Bridging Documents, preliminary design phase documents (if any) and final Construction Documents) and as follows in the schedule, and show how the sequence of the Work is affected.
    - a. Phasing: Arrange the list of activities on the schedule by phase. Include the major phasing required such as Design and Construction Phases with sub-phases of work below them.
    - b. Work by the Owner: Include a separate activity for each portion of work performed by the Owner.
    - c. Products Ordered in Advance: Include a separate activity for each product. Include the earliest possible delivery dates.
    - d. The Owner-Furnished Products: Include a separate activity for each product.
- E. Work Restrictions: Show the effect of the following items on the schedule:
  1. Coordination with existing construction.
  2. Limitations of continued occupancies.
  3. Uninterruptible services.
  4. Partial occupancy before Completion.
  5. Use of premises restrictions.
  6. Provisions for future construction.
  7. Environmental control.

- F. Work Stages: Indicate important stages of design and construction for each major portion of the Work, including, but not limited to, the following:
1. Construction Documents and other design phases under Section 01 1101 (Summary of Work – Design-Build Design Services)
  2. Subcontract awards.
  3. Submittals.
  4. Purchases.
  5. Mockups.
  6. Fabrication.
  7. Sample testing.
  8. Deliveries.
  9. Installation.
  10. Tests and inspections.
  11. Commissioning
  12. Adjusting.
  13. Curing.
  14. and placement into final use and operation.
- G. Area Separations: Identify each major area of construction for each major portion of the construction Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
1. Structural completion.
  2. Permanent space enclosure.
  3. Completion of mechanical installation.
  4. Completion of electrical installation.
  5. Completion.
- H. Milestones:
1. Incorporate key milestones in the schedule including, but not limited to the Project Milestones identified in the Agreement, and as follows:
    - a. Design Notice to Proceed
    - b. Start Schematic Design Documents
    - c. Complete Schematic Design Documents Phase
    - d. Submit All Schematic Design Documents
    - e. Complete Design Development Documents Phase (Show all Incremental Design Packages with Submittal and Review Dates)
    - f. Complete 65% Construction Documents Phase (Show all Incremental Design Packages with Submittal and Review Dates)
    - g. Complete 100% Construction Documents Phase (Show all Incremental Design Packages with Submittal and Review Dates)
    - h. Submit All Stamped and Approved plans as required to other Authorities Having Jurisdiction. 100% Construction Documents  
Construction Notice to Proceed
    - i. Start Construction  
Complete excavation of the lower level  
Complete extension of all utilities to the PL  
Complete roadway improvements  
Installation of all Fixtures and Equipment
    - j. Complete Construction
    - k.
    - l. Completion of all Work
    - m. Issuance of Certificate of Occupancy
    - n. Complete Commissioning

I. Cost Correlation:

1. At the front of the schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.
  2. Refer to Section 01 2000, (Measurement and Payment), for cost reporting and payment procedures.
  3. Design-Build Team will assign cost to construction activities on the CPM schedule. Costs must be assigned to each submittal activity line item on the Schedule of Values. Costs must be listed under the required principal subcontracts for testing and commissioning activities, operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training.
  4. Each activity cost will reflect an accurate value subject to approval by the Owner.
  5. Total cost assigned to activities must equal the total Stipulated Sum.
- J. Contract Modifications:
1. For each proposed Contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

## **2.03 Preliminary Baseline Design/Construction Schedule**

- A. The Design-Build Team must use Primavera P6 Enterprise Project Portfolio Management, version 8 or later on this Project. With each schedule submittal, Design-Build Team will provide compact disks with back-up files of the entire schedule in the native and active scheduling software program. PDF's are acceptable for historical record only.
- B. Within thirty (30) calendar days after the date of the NTP, the Design-Build Team must submit for the Owner's review and acceptance a Preliminary Baseline Schedule. This schedule must show the general plan for the work to be completed in the first one hundred and twenty (120) calendar days of the Contract. Indicate each significant activity separately and identify the first workday of each week with a continuous vertical line. Include a Summary Bar diagram for the remainder of the Work showing major milestones and summary activities with a cash requirement prediction based on required activities.
- C. The Preliminary Baseline Schedule must define milestones for the Project. The milestones must include but are not limited to the Project Milestones identified in the Agreement, and as follows:
1. Design Schedule Milestones (show milestones for each Incremental Design Package as appropriate and for each Agency reviewing them):
    - a. Notice to Proceed
    - b. Complete Survey and Confirmation of Existing Utilities, Services and Geotechnical Explorations
    - c. Complete Management Plans
    - d. Partnering Session(s)
    - e. Complete Code Analysis/Life Safety Plan
    - f. Complete Site Mobilization, Lay Down Areas and Parking Plans
    - g. Complete Design and Construction Package Phasing Plan
    - h. Start Schematic Design Documents
    - i. Submit Schematic Design Documents CDs for Review
    - j. Schematic Design Documents Approved
    - k. Complete Schematic Design Documents
    - l. Start Design Development Documents
    - m. Submit Design Development Documents for Review
    - n. Design Development Documents accepted
    - o. Complete Design Development Documents
    - p. Start 65% CDs
    - q. Submit 65% CDs for Review

- r. 65% CDs accepted
  - s. Complete 65% CDs
  - t. Start 100% CDs
  - u. Submit 100% CDs for Review
  - v. 100% CDs accepted
  - w. Complete 100% CDs
2. Construction Schedule Milestones (including but not limited to:)
- a. Start Construction (per Incremental Package Phase)
  - b. Approve Construction Schedule
  - c. Obtain Licenses, Fees, Permits
  - d. Temporary Power Available
  - e. Start Owner's On-Site Field Office
  - f. Complete Owner's On-Site Field Office (Occupancy)
  - g. Facility Watertight
  - h. Permanent Power Available
  - i. Other Utilities (Gas, Water, Fire Service, Sewer, Phone, etc.) Available
  - j. Start Functional Testing
  - k. Start Training and Demonstrations
  - l. Complete Construction (per Incremental Package Phase)
  - m. Start FFE Installation
  - n. Completion of Work (Including receipt of all licenses.)
  - o. Certification of Completion
  - p. Complete Demobilization
  - q. Complete Commissioning
3. Key Personnel Staffing Schedule. The Preliminary Baseline Schedule shall include a staffing schedule that provides a separate task for each Key Personnel (as defined in Document 00 1119 paragraph 3.02.A) that shall parallel the Project's design and construction activities. For each Key Personnel, the schedule shall indicate the start time, anticipated duration of commitment to work on the Project, and for all portions of the duration the time percentage of commitment to work on the Project. If a Key Personnel's commitment to the Project will vary over the course of the Project, additional tasks shall be provided for that Key Personnel to clearly identify the commitment variances and their relationship to the Project's design and construction schedule.
- D. Proposed Procurement Activities to be accomplished during the first one hundred and twenty (120) calendar days of the Contract.
- 1. Procurement activities must include mobilization, major shop drawing and sample submittals and the fabrication and delivery of key and long lead procurement elements and must indicate intended submittal, review and approval, and realistic delivery dates for fabrication and delivery activities.
  - 2. Procurement activities will later be incorporated into the Detailed Design/Construction Schedule (discussed hereinafter) including all requested revisions.
- E. Proposed Design/Construction Activities to be accomplished during the first one hundred and twenty (120) calendar days of the Contract.
- 1. Activity durations must be in units of whole working days and must be limited to a maximum of fifteen (15) working days twenty-one (21) calendar days for each activity.
  - 2. Design/Construction activities will later be incorporated into the Detailed Design/Construction Schedule (discussed hereafter) including all requested revisions.
- F. Summary Activities not included above that are necessary to properly indicate:
- 1. The approach to scheduling the remaining work areas or phases of the work. The work for each phase or area must be represented by at least one summary activity such that they cumulatively indicate the entire Design/Construction Schedule.



2. The approximate cost and duration for each summary activity must be shown on the Preliminary Baseline Schedule.
  - a. The Preliminary Baseline Schedule must conform with the requirements outlined in the "Technical Requirements for Design-Build Team-submitted Schedules" in this specification section.
  - b. The Cost-loaded Preliminary Baseline Schedule will be the basis for progress payments during the first one hundred and twenty (120) calendar days of the Contract while the Detailed Final Baseline Design/Construction Schedule (discussed hereafter) is being developed and accepted.
  - c. The Preliminary Baseline Schedule must be updated on a monthly basis while the Detailed Final Baseline Design/Construction Schedule is being developed. The monthly updating of the Preliminary Baseline Schedule must be consistent with the procedures and requirements described in the "Schedule Updating" section of this specification section.
  - d. The Preliminary Baseline Schedule must be used for the preliminary review of time extension request(s) during the first one hundred and twenty (120) calendar days of the Contract while the Detailed Final Baseline Design/Construction Schedule is being developed.
  - e. Within fourteen (14) calendar days after receipt by the Owner of the Preliminary Baseline Schedule, the Owner will make recommendations to the Design-Build Team as to adjustments to the Preliminary Baseline Schedule. These recommendations, if accepted by both the Owner and Design-Build Team, will be incorporated into the development of the Detailed Final Baseline Design/Construction Schedule. The Design-Build Team must provide a response to the concerns of the Owner, to the satisfaction of the Owner, before the submittal of the Detailed Design/Construction Schedule.

#### **2.04 Detailed Final Baseline Design/Construction Schedule**

- A. Within ninety (90) calendar days following Notice to Proceed, Design-Build Team will submit to the Owner a proposed Detailed Final Baseline Design/Construction Schedule in CPM format for the Design-Build Team's design and construction work scope.
- B. The proposed Detailed Design/Construction Schedule must conform with the requirements outlined in the "Technical Requirements for Design-Build Team-Submitted Schedules" in this specification section.
- C. The proposed Detailed Final Baseline Design/Construction Schedule will be reviewed in the following manner:
  1. Within fourteen (14) calendar days after receipt by the Owner of the proposed Detailed Final Baseline Design/Construction Schedule, the Owner must notify the Design-Build Team of any concerns the Owner may have in regard to the Schedule.
  2. If the Owner questions the Design-Build Team's proposed activities, logic, durations, manpower, or cost loading, the Design-Build Team must, within seven (7) calendar days after receipt of the Owner's request, provide a satisfactory revision to, or adequate justification for, these activities, logic, durations, manpower, or Cost-loading to the satisfaction of the Owner.
  3. In the event the Design-Build Team fails to define any element of work, activity or logic and the Owner review does not detect this omission or error, such omission or error, when discovered by the Design-Build Team or Owner, must be corrected by the Design-Build Team at the next monthly Schedule Update and or weekly progress meeting, (discussed hereinafter) and will not affect the Contract Time.
- D. Upon Owner's acceptance of the changes to the proposed Detailed Final Baseline Design/Construction Schedule, the Design-Build Team and Owner will demonstrate their mutual

acceptance by signing the front of the Detailed Final Baseline Design/Construction Schedule. The Owner's acceptance is subject to J below.

- E. Upon acceptance, the design/construction schedule will be utilized as a BASELINE SCHEDULE for evaluation of all work yet to be performed.
- F. No accepted activity will be deleted from the Detailed Design/Construction Schedule. In the event that an activity is no longer appropriate to the plan, either by change order or otherwise, it will be statused with "zero duration" as of the date such determination is made and offsetting cost adjustment made as required to balance within the activity's cost account.
- G. Redistribution of costs between Contract bid line items will not be allowed.
- H. Acceptance by the Owner of the Design-Build Team's Detailed Final Baseline Design/Construction Schedule will be a condition precedent to the making of any progress payments under the Contract after the first one hundred and twenty (120) calendar days of the Contract.
- I. Upon acceptance of the Detailed Final Baseline Design/Construction Schedule by the Owner, the cost-loaded values of the Schedule will be used as a basis for determining progress payments based on work completed to date, in conjunction with the Schedule of Values. Monthly progress payments will be based upon information developed at the monthly Schedule Update. The computer-produced Cost Report will be structured to directly roll up to the accepted billing summary and utilized by the Owner for verification of the Application for Payment submitted by the Design-Build Team.
- J. Acceptance by the Owner of the Design-Build Team's Detailed Final Baseline Design/Construction Schedule does not relieve the Design-Build Team of any of Design-Build Team's responsibility whatsoever for the accuracy or feasibility of the Detailed Design/Construction Schedule, or of the Design-Build Team's ability to meet the Contract completion date or milestone dates, nor does such acceptance acknowledge or admit the reasonableness of the activities, logic, durations, manpower, or Cost-loading of the Design-Build Team's Detailed Design/Construction Schedule.
- K. General:
  - 1. Prepare network diagrams using AON (activity-on-node) format.
  - 2. Preliminary Baseline Design/Construction Schedule: Submit schedule within 30 calendar days of date established for the Notice to Proceed. Outline significant construction activities for the first one hundred and twenty (120) calendar days of design and construction. Include summary bar diagrams for the remainder of the Work and a cash requirement prediction based on required activities.
  - 3. CPM Schedule:
    - a. Prepare Design-Build Team's Detailed Final Baseline Design/Construction Schedule using a computerized, cost- and resource-loaded, time-scaled CPM network analysis diagram for the Work.
    - b. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than ninety (90) calendar days after date established for the Notice to Proceed. A CPM network that incorporates all activities with descriptions, sequence, logic relationships, duration estimates, resource-loading, cost loading and other information defined for all design, pre-construction and construction activities. Each activity will have a minimum of one predecessor and one successor, with the exception of the first and last milestone activities. The first milestone activity must be the "Notice to Proceed" and the last activity will be denoted as "Final Completion. Both are Contract Milestones.

- c. Failure to include any work item required for performance of this Contract will not excuse Design-Build Team from completing all work within applicable completion dates, regardless of the Owner's approval of the schedule.
  - d. Conduct educational workshops to train and inform key Project personnel including, without limitation, subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
  - e. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
  - f. Use "one workday" as the unit of time. Include list of nonworking days and holidays incorporated into the schedule as a calendar. However, the Contract time is in calendar days.
4. CPM Schedule Preparation:
- a. Prepare a list of all activities required to complete the Work. Using the preliminary network diagram, prepare a network to identify probable critical paths.
  - b. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
    - c. Preparation and processing of submittals.
    - d. Mobilization and demobilization.
    - e. Purchase of materials.
    - f. Delivery.
    - g. Fabrication.
    - h. Utility interruptions.
    - i. Temporary facilities
    - j. Installations.
    - k. Work by the Owner that may affect or be affected by Design-Build Team's activities.
    - l. Testing and commissioning.
- L. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates must be consistent with Article 2 of the Agreement.
- M. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
1. Format:
- a. Identify and mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
  - b. Sub-networks on separate sheets are permissible for activities clearly off the critical path.
- N. Initial Issue of Schedule:
1. Prepare initial network diagram from a list of straight "early start-total float" sort. Identify critical path activities. Prepare tabulated reports showing the following:
- a. Design-Build Team or Designer or Subcontractor and the Work or activity.
  - b. Description of activity.
  - c. Principal events of activity.
  - d. Immediate preceding and succeeding activities.
  - e. Early and late start dates.
  - f. Early and late finish dates.
  - g. Activity duration in workdays.
  - h. Total float or slack time.
  - i. Average size of workforce.
  - j. Dollar value of activity (coordinated with the Schedule of Values).

- O. Schedule Updating:
1. Concurrent with making revisions to schedule, prepare a narrative with each update and tabulated reports showing the following:
    - a. Identification of activities that have changed.
    - b. Changes in early and late start dates.
    - c. Changes in early and late finish dates.
    - d. Changes in activity durations in workdays.
    - e. Changes in the critical path.
    - f. Changes in total float or slack time.
    - g. Changes in the Contract Time.
- P. Value Summaries:
1. Prepare two cumulative value lists, sorted by finish dates.
  2. In first list, tabulate activity number, early finish date, dollar value, and cumulative dollar value.
  3. In second list, tabulate activity number, late finish date, dollar value, and cumulative dollar value.
  4. In subsequent issues of both lists, substitute actual finish dates for activities completed as of list date.
  5. Prepare list for ease of comparison with payment requests; coordinate timing with progress meetings.
    - a. In both value summary lists, tabulate "actual percent complete" and "cumulative value completed" with total at bottom.
    - b. Submit value summary printouts 2 business days before each regularly scheduled progress meeting.

## 2.06 Milestones

- A. The Design-Build Team must adhere to the following Milestone submittal dates in accomplishing the work unless such dates are modified in writing by the Owner:

<u>EVENT</u>	<u>MILESTONE DATE</u>
Preliminary Baseline Design/Construction Schedule Submittal	NTP + 30 Days
Proposed Detailed Final Baseline Design/Construction Schedule Submittal	NTP + 90 Days

## PART 3 – TECHNICAL REQUIREMENTS

### 3.01 Technical Requirements for Design-Build Team Schedules

- A. The Design-Build Team will consider the following guidelines in the development of the Construction schedule:
1. The Schedule must be developed utilizing the Precedence Diagramming Method.
  2. Milestone dates must be adhered to and will be clearly identified on the Schedule.
    - a. Milestone dates may not be changed without the written consent of the Owner.
    - b. Contract Start Milestones will be constrained by "Start No Earlier Than" constraints.
    - c. Contract Completion Milestones will be constrained by "Finish No Later Than" constraints.
    - d. "Mandatory", "Start On", and "Finish On" constraints will not be allowed.
  3. The Schedule must clearly identify the activities illustrating accomplishment of the time(s) for completion of the Project set forth in the Agreement. If the Schedule indicates earlier completion time(s) than that set forth in the Agreement, the difference between the Schedule

- and the Agreement dates will be considered to be part of the total float available. This float is a resource available to both the Owner and the Design-Build Team, as provided in 1.02.F.2 above and Part 5 below. If the Design-Build Team presents a schedule with an early completion date, the Owner reserves the right to issue a Contract change order revising the Contract Completion Date and associated milestones to those indicated in the Design-Build Team's schedule. However, the Contract time will not be revised unless a Contract change order has been issued and executed by both parties.
4. In developing the Schedule, the Design-Build Team will be responsible for assuring that subcontractor work at all tiers, as well as Design-Build Team's own work, is included in the Schedule.
  5. The Schedule must show the sequence and interdependence of activities required for complete performance of the work. The Design-Build Team will be responsible for assuring all work sequences are logical and the Schedule shows a coordinated plan of the work.
  6. The schedule must only contain two (2) open ended activities. NTP with no predecessor relationship and Project Complete with no successor relationship.
  7. Failure by the Design-Build Team to include any element of work required for performance of the Contract or failure to properly sequence the work will not excuse the Design-Build Team from completing all work within the Contract Time.
  8. The level of detail of the Design-Build Team's Schedule will be a function of the complexity of the work involved. The total number of activities will be subject to approval by the Owner. Construction activities must represent the continuous work of a single crew in a defined work area or location and have a duration of not longer than fifteen (15) workdays, without prior acceptance of the Owner. Non-construction/non-design activities (such as procurement, fabrication, etc.) may have durations in excess of 15 work days.
  9. Normal weather conditions will be considered and included in the planning and scheduling of all work influenced by high or low ambient temperatures, wind, and/or precipitation to ensure completion of all work within the Contract Time. Expected weather delays will be added as an activity to the back of the schedule and treated as weather float. The use of this weather float must be requested by the Design-Build Team and approved by the Owner in advance of adjusting the schedule. The duration of the weather float activity will be based on the number of weather days provided in Document 00 7253 (General Conditions), paragraph 15.01.
    - a. Work will be planned to minimize the impact of rain and include the grading of the work area, installation of dewatering pumps and provision of covers.
    - c. Keep drainage and dewatering systems operable 24 hours and 7 days each week throughout construction.
    - d. No "Rain Days" will be allowed for rain less than <0.10" per day as measured at the NOAA weather station nearest the jobsite.
  10. Schedule activities must meet the following criteria:
    - a. Activity descriptions must be clear and concise. All activity ends must be tied into the schedule by logical restraints.
  11. Proposed durations assigned to each activity will be the Design-Build Team's best estimate of time required to complete the activity considering the scope and resources planned for the activity. Resources and Labor (Manhours) allocated to each activity must be consistent with activity duration and supported by the Design-Build Team's estimate and industry standard estimating/productivity guides such as "Means" and/or "Walker's".
  12. Responsibility for each activity must be identified with a single performing organization, typically the Subcontractor name. WBS structure must be utilized by the Design-Build Team as agreed by the Owner.
  13. Schedule activities will be cost-loaded in whole dollars and the assigned dollar value (cost-loading) of each activity of the Network must cumulatively equal the Total –Stipulated Sum Amount. The tasks and amounts in the cost-loaded schedule will be utilized as the Schedule of Values for progress payment purposes. Mobilization, bond and insurance costs may be shown separately; however, other General Conditions costs, overhead, profit, etc., will be prorated throughout all activities. For any items that the Design-Build Team intends to bill for stored materials, these items need to be shown as separate "material procurement" activities

- in the schedule and the material dollars only placed on these activities. Billing for stored materials on any other schedule activities not broken out in this manner will not be allowed.
14. Design-Build Team will assign manpower-loading for each activity of the Network. In addition, the Design-Build Team will prepare and submit a separate manpower summary analysis in graphic format depicting manpower by subcontractor and aggregate. The graph(s) must show the number of man-days of effort, by month, over the duration of the Construction Schedule.
  15. For all major equipment and materials fabricated or supplied for this Project, the network must show a sequence of activities including:
    - a. Preparation of shop drawings and sample submissions. Any accepted costs associated with submittal preparation will be assigned to the approval of the particular submittal.
    - b. Review and approval of shop drawings and samples: allow 30 calendar days for review of major submittals and samples, and 14 calendar days for review of all other submittals).
    - c. Shop fabrication and delivery (including transit time). Advanced purchases such as mill orders or other major equipment purchases will be carried as separate Cost-loaded activities.
    - d. Erection or installation.
  16. Field Testing of Equipment and Materials. Testing and Inspection will be cost- and labor-loaded to the extent of the effort necessary in the field.
    - a. The schedule must include a detailed plan for preparation, submittal, review, re-submittal, if required, and acceptance for detailed MEPS/Structural/Architectural Coordination Documents prepared by the individual trade subcontractors utilizing CAD backgrounds supplied by the Architect of Record.
    - b. If requested by the Owner, the Design-Build Team will furnish a written narrative of the Design-Build Team's determination of durations for critical activities. Such explanation must include the number of crews, crew composition, number of shifts per day, number of hours in a shift and the number of work days per week. The Design-Build Team will provide a list of the major items of construction equipment intended for use on this Project's operations including types, number of units, unit capacities and the proposed time each piece of equipment will be on the job, keyed to the activities on which the equipment will be used.
  17. For each Construction Schedule submittal, as well as for each Schedule Update, the Design-Build Team will provide the following to the Owner as specified in the "Required Reports section of this specification:
    - a. Compact Disc containing the Construction Schedule in the native format of the scheduling software. All schedules, graphics and reports in PDF format.
    - b. Three(3) color prints of all schedules, graphics, and reports.
  18. Other activities must consider indicating the start and finish dates for the Project design, engineering, preparation of design development and construction documents, government agency plan check and Owner agency document review.
  19. Activities to be integrated and shown in the CPM network must include all milestones representing the Design-Build Team's submittal dates and activities representing the Owner's review period of each submittal; Design-Build Team's procurement of materials and equipment; submittals; manufacture and/or fabrication, testing and delivery to the jobsite of special material and major equipment; equipment installation and preliminary, final and performance testing of equipment or systems.
  20. Activities showing the start and finish dates for all temporary works; all construction of mock-ups, and prototypes and/or samples.
  21. Activities showing start and finish dates of owner-furnished items and interface requirement dates with other contractors; regulatory agency approvals; and permits required for the performance of the work.
  22. Activities showing start and finish of modular system furniture.
  23. Activities related to commissioning and close-out.
  24. The schedule must consider all foreseeable factors or risks affecting, or which may affect the performance of the work, including historical and predicted weather conditions, applicable

- laws, regulations or collective bargaining agreements pertaining to labor, transportation, traffic, air quality, noise and any other applicable regulatory requirements.
25. The Design-Build Team will not use any "float suppression" techniques such as preferential sequencing or logic, special lead/lag constraints or unjustifiably over-estimating activity durations in preparing its schedule.
  26. The Design-Build Team will not use negative lag.
  27. All activities requiring time to complete must be included in the schedule as an activity (Cure time, etc.). The Design-Build Team will not consume time by the use of finish-to-start relationships with positive lag.
  28. The Design-Build Team must attach a narrative report which explains assumptions used for activity durations, its assumptions regarding crew sizes, equipment requirements and production rates, any potential areas of concern or specific areas requiring coordination it may have identified and any long-lead time materials or equipment in the work.
  29. The Design-Build Team's Scheduling Manager will formally present the detailed time-scaled CPM network for the duration of the Contract time, demonstrating compliance with Article 2 of the Agreement and other requirements to the Owner clearly showing the critical path(s) of the Project through completion.

## **PART 4 - REPORTS**

### **4.01 Required Scheduling Reports**

- A. As a part of the Detailed Design/Construction Schedule submittals, as well as for each Schedule Update, the Design-Build Team must submit the following reports and graphics as indicated:
  1. Graphics:
    - a. Detailed CPM Network with critical path highlighted sorted by Early Start Dates.
    - b. Detailed Gantt chart grouped by WBS and sorted by Early Start ascending, Early Finish ascending. (Initial Submittal and When Revised.)
    - c. Short-interval Gantt chart showing 1 week of history and 3 weeks of future work (Weekly).
    - d. Cost curve and histogram (Initial Submittal and When Revised.)
    - e. Manpower curve and histogram (Initial Submittal and When Revised.)
    - f. Milestones only.
  2. Native and Active Computerized schedule reports:
    - a. Activity listing report showing all schedule activities, sorted by activity number. (Initial Submittal.)
    - b. Milestone Summary Report listing all milestones.
    - c. Precedence report showing activity predecessors and successors, including relationship type and lag, sorted by activity number. (Initial Submittal and When Revised.)
    - d. Total float report, sorted by total float from low to high. (Initial Submittal and When Revised.)
    - e. Early start report, grouped and sorted by Early Start Date.
    - f. Cost report showing activity dollar value, dollar value of work in place to-date, and dollar value for current period. (Initial Submittal and When Revised.)
    - g. Resource report showing worker day allocations by specific trade on each activity. (Initial Submittal and When Revised.)
    - h. Variance report comparing current dates to target dates. (Monthly Updates.)
    - i. Cash flow report showing monthly projections of expenditures. (Initial Submittal and When Revised.)
  3. Narrative schedule report including:
    - a. Description of the actual work accomplished during the reporting period. (Monthly Updates)
    - b. Description of any problem areas. (Initial Submittal and Monthly Updates.)

- c. Description of current and anticipated delays with recommended corrective actions to mitigate such delays. (Monthly Updates.)
- d. A list of major construction equipment used on the work during the reporting period and any construction equipment idle during the reporting period. (Monthly Updates.)
- e. A total number of men by craft actually engaged on the work during the reporting period, with such total Stated separately as to office, supervisory, and direct labor. (Monthly Updates.)
- f. A list of Design-Build Team-supplied permanent materials, long lead items and equipment indicating current availability and anticipated job site delivery date. (Initial Submittal and When Revised.)
- g. A list and explanation of proposed modifications, additions, deletions, and changes in logic to the approved construction schedule. If modifications are proposed a when Revised schedule demonstrating the effects of such modifications is to be submitted. (Monthly Updates.)

## **PART 5 - FLOAT**

### **5.01 Float Time**

- A. Float is not for the exclusive use or benefit of either the Design-Build Team or the Owner. Float time will be apportioned according to the needs of the Project as approved by the Owner.
- B. Pursuant to the float sharing requirements as set forth in paragraph 5.01A, use of float suppression techniques such as preferential sequencing, special lead/lag logic restraints, extended activity durations, or constrained dates may be cause for rejection of the Construction Schedule and any revisions or updates.

## **PART 6 – SCHEDULE MEETINGS**

### **6.01 Pre-Construction Conference:**

- A. The Design-Build Team will schedule and conduct a schedule preconstruction conference. Design-Build Team must be prepared to review and discuss the schedule and sequence of operations plus cost and manpower loading methodology. The conference will be attended by:
  - 1. Design-Build Team's Project Manager, Superintendent, and Scheduler.
  - 2. Any other Design-Build Team's key personnel (including, without limitation, all Key Personnel referenced in paragraph 2.03.C.3 above), Subcontractor's representatives, and major supplier's representatives that the Design-Build Team deems advisable to attend.
  - 3. Representatives from the Owner and other agencies will also be invited to attend.
- B. Procedures will be reviewed for the following:
  - 1. Development of the Detailed Design/Construction Schedule by the Design-Build Team.
  - 2. Periodic updating of schedule activities and method of determining schedule percent complete.
  - 3. Organizational / WBS / Account Code Structures required for the Project.
  - 4. Cost-loading of activities.
  - 5. Manpower loading of activities.
  - 6. Procedures for making modifications to the schedule.
  - 7. Procedures for assessing schedule impacts, schedule delays, and time extensions.
  - 8. Development of recovery schedules.
  - 9. Data exchange and communications.



## **6.02 Weekly Schedule Meetings:**

- A. Once each week, on a day mutually agreed to by the Owner and the Design-Build Team, a meeting will be held to assess the progress achieved by the Design-Build Team during previous work week. The Design-Build Team must submit a progress schedule listing the activities completed and in progress for the previous week and the activities scheduled for the succeeding 3 weeks. A bar chart directly derived from the Detailed Design/Construction Schedule will be used to generate the three week window. All activities shown in this short interval schedule will be identified by the same activity numbers and descriptions as shown in the Construction Schedule. The Design-Build Team may add further details to monitor this Short Interval Schedule.
- B. If deemed necessary by the Owner, the Owner may at its option require more frequent schedule meetings.

## **PART 7 – SCHEDULE UPDATING AND PROGRESS PAYMENTS**

### **7.01 Schedule Updating**

- A. A meeting will be held on approximately the 25<sup>th</sup> of each month to review the Schedule update submittal and progress payment application. This updating process will be performed by the Owner and Design-Build Team making an assessment of schedule activity progress during a joint job-site walk through. Use of a Schedule Update Report to log this activity progress is recommended. Information to be recorded consists of activity actual start and finish dates, activity percents (%) complete, and (if applicable) dollar amounts earned for each activity.
- B. Once this information has been recorded, this data will be processed by computer by the Design-Build Team, and will be used as the basis for the Design-Build Team's monthly Application for Payment. Allowable billing amounts for each activity will be the activity's budgeted cost amount times the updated percent complete.
- C. Upon finalization of the computerized schedule update, the Design-Build Team must submit the required schedule reports, as detailed in the "Required Reports" section, to the Owner for the processing of the Design-Build Team's payment application.
- D. In addition to these monthly updates, interim updates may be performed on the Design/Construction Schedule at the discretion of the Owner. While these interim updates will not be for Payment Application purposes, Design-Build Team will be expected to contribute update data to the Owner as required to complete these updates.
- E. Monthly update/status of electronic database must include recording of all Actual Start Dates and Actual Finish Dates and status of activities in progress.
- F. Review of "Planned" versus "Actual" work force allocations and progress for the preceding month.
- G. Review of revisions, added or deleted work and how those activities are being integrated into the Design-Build Team's work plan.
- H. Review of Design-Build Team's interface and coordination with other work on the Project site.
- I. Review of all impacts to the work during the preceding month and to date, Design-Build Team evaluation of those impacts and any recovery plans or remedial actions required to comply with the Contract schedule.

## **7.02 Progress Payments**

- A. The submission and acceptance of progress updates and the cost reports calculating the value of work done for any given pay period for each activity, based on the percentage complete for that activity, will be the basis for monthly progress payments. The Design-Build Team will be entitled to progress payments only as determined from the current updated and approved Schedule Cost Report generated as a result of the monthly progress update.
- B. The monthly updating of the Design/Construction Schedule must be an integral part and basic element of the estimate upon which progress payments will be made. If, in the judgment of the Owner, the Design-Build Team fails or refuses to provide information required to accomplish a complete Design/Construction Schedule Update or revision as specified hereinafter, the Design-Build Team will be deemed to have not provided the required estimate upon which progress payments may be made, and will not be entitled to progress payments until it has furnished the information necessary for a complete Schedule Update to the satisfaction of the Owner.

## **PART 8 - SCHEDULE MODIFICATIONS**

### **8.01 Revisions to the Design/Construction Schedule**

- A. If, as a result of the monthly Schedule Update, it appears the Design/Construction Schedule no longer represents the actual prosecution and progress of the work, the Owner may require the Design-Build Team to submit a revision to the Design/Construction Schedule. Such revisions to the Schedule must not alter any of the Contract milestone constraints.
- B. The Design-Build Team may also request revisions to the Construction Schedule in the event the Design-Build Team's planning for the work is revised. If revisions to the Construction Schedule are contemplated, the Design-Build Team must notify the Owner in writing at least fourteen (14) calendar days prior to the next Schedule Update meeting. The Design-Build Team must submit fragments of the proposed changes along with a written narrative of the proposed changes. Such revisions to the Schedule must not alter any of the Project Milestone dates. If accepted by the Owner, these fragments will be incorporated into the Construction Schedule.
- C. Updating the Design/Construction Schedule to reflect actual progress will not be considered a revision to the Design/Construction Schedule.
- D. Schedule revision must be submitted utilizing a copy of the updated construction schedule as modified with proposed changes; a narrative explanation of the change(s); and a copy of a detailed comparison with the current updated schedule detailing all changes.
- E. Upon acceptance of a revision, the revised current Design/Construction Schedule must be the basis for evaluating future status, impacts, and/or changes.

## **PART 9 - PROGRESS**

### **9.01 Schedule Impacts, Schedule Delays, Time Extensions**

- A. During the course of the Project, it may be appropriate to revise the Schedule to incorporate impacts or delay issues into the Project Schedule. If the Design-Build Team feels it has encountered schedule impacts that it feels may warrant a time extension, it will present an Impacted Schedule to the Owner supporting his claim.
- B. The procedure for incorporating impacts into the schedule is as follows:
  - 1. Create a schedule activity (or activities) that represent the scope of the change or delay.
  - 2. Assign durations and cost/manpower resources to these new activities.

3. Determine appropriate logic ties for these new activities. Assign predecessors and successors so that these activities can tie into the existing schedule activities. Every effort to mitigate the potential delay by either isolating the impact of the delay or planning “work-around” approaches to the work will be considered and incorporated where deemed effective.
  4. These impact activities should be loaded into a copy of the updated schedule that immediately preceded the impact issue’s time frame. For instance, if an impact issue occurs during mid-April, the new activities should be input into the March 31 (status date) update.
  5. After the Schedule is recalculated with these impact activities in place, the affect they have on the Project Milestones will determine if any time extension is merited.
- C. The Impacted Schedule, along with the Time Impact Evaluation (“TIE”) and other backup data describing the new schedule activities and logic ties that comprise the impact/delay issues, must be submitted to the Owner for review and approval. Design-Build Team is solely responsible for submitting a Contract-complaint Time Impact Evaluation for any time extension request. Failure to provide a Contract-complaint TIE constitutes Design-Build Team’s waiver for time and precludes any time extension related to that time request. If Design-Build Team submits and Contract-complaint TIE with requisite backup establishing entitlement to a time extension that is approved by Owner, these impact/delay issues will become a permanent part of the Project Schedule. The Design-Build Team will not unilaterally make changes to the Project Schedule to justify schedule impacts without the approval of the Owner.
- D. Activity delays will not automatically mean that an extension of the Contract Time is warranted or due the Design-Build Team. It is possible that an impact or delay will not affect existing critical activities or cause non-critical activities to become critical. An impact or delay may result in only absorbing a part of the available total float that may exist within an activity chain of the Network, thereby not causing any effect on the Contract Completion Date or other Contract Milestone dates.
- E. Float is not for the exclusive use or benefit of either the Owner or the Design-Build Team. Contract time extensions will be granted only to the extent that equitable time adjustments to the activity or activities affected by the impact or delay exceeds the total float along the critical path of activities at the time of the delay.
- F. Impacts that may entitle Design-Build Team to a Contract Time extension are provided in Document 00 7253 (General Conditions) Article 15.
- G. The Owner will not have any obligation to consider any time extension request unless the requirements of Document 00 7253 Article 15 and of this specification section are complied with. The Owner will not be responsible or liable to Design-Build Team for any design or constructive acceleration due to failure of the Owner to grant time extensions under the Contract Documents should Design-Build Team fail to comply with the submission requirements and the justification requirements of this Contract for time extension requests.
- H. Design-Build Team is responsible for all costs associated with the preparation of TIEs, and the process of incorporating TIE’s into the current schedule update.
- I. In the event the Design-Build Team fails to submit a Contract-compliant TIE prior to the completion of impacted work, the impact of delays will be limited to that portion of actual delay attributable to those legitimate impacts enumerated herein.

## **9.02 Recovery Schedule**

- A. The Design-Build Team must furnish such manpower, materials, facilities and equipment and will work such hours, including shift work and overtime, as may be necessary to insure the progress and completion of the work in accordance with the approved and currently updated Construction

Schedule. If work falls behind schedule due to Design-Build Team actions to the extent that any of the Milestone dates or completion dates will not be met, the Design-Build Team agrees that he will, as necessary, and within 48 hours of written notice, take some or all of the following actions at no additional cost to the Owner, as required to substantially eliminate, in the judgment of the Owner, the backlog of work:

1. Increase manpower in quantities and crafts necessary;
  2. Increase the number of working hours per shift, shifts per working day, working days per week, the amount of equipment, or any combination of the foregoing, and/or
  3. Reschedule activities to achieve maximum practical concurrency of accomplishment.
- B. The Design-Build Team must also submit to the Owner a supplementary recovery schedule in the form of a fragnet which displays how the Design-Build Team intends to reschedule activities to regain compliance with the construction schedule's milestone dates.
- C. The obligations of this paragraph 9.02 supplement, and do not replace, Owner's rights and Design-Build Team's obligations under Document 00 7253 paragraph 11.02.
- D. Failure of the Design-Build Team to substantially comply with these requirements may be considered grounds for a determination by the Owner that the Design-Build Team is failing to prosecute the work with sufficient diligence to ensure its completion within the Contract time. Upon making this determination, the Owner may pursue any of the remedies described in Document 00 5200 (Agreement) and Document 00 7253 (General Conditions).

**END OF SECTION**